

## SEQUENCE LISTING

<110> Wu, Shilan  
Hayashi, Jon H.  
Kinne, Lyle P.  
Dierks, Peter M.

<120> Lepidoptera Voltage-Gated Calcium Channels

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Cys Val Val Leu Ala Leu Glu Glu His Leu Pro Asn Gly Asp Lys Thr  
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Ile Leu Ala Gln Asn Leu Glu Lys Thr Glu Ala Tyr Phe Leu Gly Ile  
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Phe Cys Val Glu Ala Ser Leu Lys Ile Leu Ala Leu Gly Phe Val Leu  
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His Arg Gly Ser Tyr Leu Arg Asn Val Trp Asn Ile Met Asp Phe Phe  
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Val Val Val Thr Gly Ile Ile Thr Gln Leu Pro Ile Ala Pro Ala Asp  
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Lys Ala Met Ala Pro Leu Leu Gln Ile Gly Leu Leu Val Leu Phe Ala  
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His Lys Thr Cys Tyr Asn Leu Glu Asp Ile Ser Glu Ile Val Asn Glu  
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Gly Asp Ser Ala Thr Pro Cys Asn Ala Asp Asn Val Ser Leu Ala Pro  
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Trp Glu Gly Pro Asn Arg Gly Ile Thr Ser Phe Asp Asn Ile Gly Phe  
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Tyr Phe Val Pro Leu Ile Val Leu Gly Ser Phe Phe Met Leu Asn Leu  
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Val Leu Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Lys Val  
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Glu Asn Arg Gln Glu Phe Leu Lys Leu Arg Arg Gln Gln Gln Leu Glu  
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Gln Glu Leu Glu Lys Gly Met Gly Ala Leu His Ala Val Asp Gly Thr  
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Pro Pro Gly Val Asp Leu Ser Pro Ser Ser Pro Thr Ser Arg Lys Asn  
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Lys Lys Lys Glu Glu Ala Lys Lys Glu Asp Glu Asp Glu Val Pro Asp  
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Val Val Asn Ser Leu Lys Asn Val Ile Asn Ile Leu Ile Val Tyr Ile  
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Val Ala Met Leu Thr Leu Phe Ala Val Gln Thr Gly Glu Gly Trp Pro  
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Ile Gln Asn Phe Arg Ile Glu Met Ser Ile Phe Tyr Ile Val Tyr  
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Gly Glu Ile Asp Lys Asn Gln Lys Ser Cys Ile Asp Phe Thr Ile  
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Tyr Phe Ile Met Thr Leu Ile Val Leu Asn Thr Leu Leu Leu Met  
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Phe Met Asn Leu Val Phe Thr Thr Phe Phe Leu Leu Glu Thr Val  
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Lys Ala Leu Pro Tyr Val Cys Leu Leu Ile Ala Met Leu Phe Phe  
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Ile Tyr Ala Ile Ile Gly Met Gln Val Phe Gly Asn Ile Glu Leu  
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Thr Pro Glu Ser Asp Met Asn Arg His Asn Asn Phe Arg Ser Phe  
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Pro Leu Gly Phe Gly Asn Lys 1385 Cys Pro Asn Arg Leu 1390 Ala Tyr Lys 1395

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Ile Lys Met Arg Ser Pro Glu 1430 Glu Met Asp Gln Ala 1435 Asp Glu Glu 1440

Leu Arg Glu Thr Ile Thr His 1445 Ile Trp Pro Leu Gln 1450 Ala Lys Lys 1455

Met Leu Asp Leu Leu Val Pro 1460 Arg Asn Asp Val Leu 1465 Asn Ala Gly 1470

Lys Leu Thr Val Gly Lys Ile 1475 Tyr Ala Gly Leu Leu 1480 Ile Leu Glu 1485

Ser Trp Arg Ser Thr Arg Phe 1490 Lys Gln Asn Gly Val 1495 1500 Pro Val Leu

Glu Leu Gln Gly Ser His His 1505 Ala Ser Met Glu Ser 1510 1515 Leu Asp Glu

Gly Arg Leu Gln Ala Pro His 1520 Thr Tyr Gln Asn Gly His His His 1525 1530

Gly Arg Ser Ser Ser Leu Arg 1535 Arg Thr Pro Ser Pro Arg Arg Arg 1540 1545

Gly His Tyr Gly Gly Tyr His His Asp Ile Gly Phe Ser Asp Thr  
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Val Ser Asn Val Val Glu Ile Val Lys His Glu His Gln Arg His  
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Gly Arg Thr His Arg Ala Pro His Tyr Tyr His Pro His Val Trp  
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Arg Arg Leu Pro Pro Thr Pro Asn Lys Pro Ser Ser Leu Gln Leu  
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Arg Pro Pro His His Ser Ala Ser Ile Asn Phe Pro Lys Leu Asn  
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Ala Ser Pro Thr Arg Gly Gln Pro Ala Ser Leu Pro Lys Pro Pro  
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Pro Val Asn Met Ser Ser Thr Ser Thr Ala Ala Ala Val Ala Arg  
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Ala Met Ser Ile Gly Arg Ser Gly Arg Leu Leu Pro Ser Pro Val  
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Arg Asn Gly Tyr Ala Ser Ser Ser Ser Lys Gln Gln Gln Gln Gln  
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Gln Gln Pro Ser Ser Ser Ser Ser Val Ser Ala Ile Arg Arg Gln  
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Asp Asn Asn Trp Trp Ile Gly Arg Leu Val Lys Glu Gly Ser Asp Val  
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Gly Phe Ile Pro Ser Pro Val Lys Leu Glu Ala Val Arg Ser Gly Leu  
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Gly Ala Arg Arg Tyr Pro Arg Pro Ala Ser Ala Ala Pro His Ala Pro  
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Glu Lys Arg Lys Pro Phe Phe Lys Lys Ala Glu Ala Ser Thr Pro Tyr  
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Asp Val Val Pro Ser Met Arg Pro Val Val Ile Val Gly Pro Ser Leu  
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Leu Lys Arg Arg Phe Glu Gly Arg Ile Ile Ile Thr Arg Val Met Ala  
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Ala Ile Met Glu Arg Ser Asn Ser Arg Ser Thr Cys Leu Ala Glu Val  
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Gln Ala Glu Ile Glu Arg Ile Phe Glu Leu Ala Arg Thr Leu Gln Leu  
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Val Val Leu Asp Cys Asp Thr Ile Asn His Pro Ser Gln Leu Ala Lys  
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Thr Ser Leu Ala Pro Thr Ile Val Tyr Leu Lys Ile Ser Ser Pro Lys  
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Val Leu Gln Arg Leu Ile Lys Ser Arg Gly Lys Gly Gln Thr Lys Asn  
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Leu Ser Val Gln Met Val Ala Ala Glu Lys Leu Ala Gln Cys Pro Pro  
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Asp Met Phe Asp Val Ile Leu Asp Glu Asn Gln Leu Glu Asp Ala Cys  
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Glu His Ile Ala Glu Tyr Leu Glu Ala Tyr Trp Arg Ala Thr His Pro  
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Pro Val Pro Glu Glu Ala Ala Pro Ala Arg Pro Val Pro Arg Thr His  
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Asn Ala His Ala Met Pro Gly Gly Arg Ser Arg Ala Ala Arg Pro Glu  
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Arg Leu Glu Glu Glu Tyr Tyr Pro Arg Gly Glu Arg Cys Glu Arg Tyr  
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Glu Arg Gly Tyr Pro Arg Asp Tyr His Glu Tyr Gly Pro Glu Tyr Pro  
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Arg Glu Arg Ala His Ala Ala His Ala Ala Ala Pro His Asp Ala Tyr  
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Gly His Asp Tyr Thr Arg Asp Ala Tyr Ala Arg Glu Glu Tyr Gly Arg  
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Lys Val Leu Gln Arg Leu Ile Lys Ser Arg Gly Lys Gly Gln Thr Lys  
325 330 335

Asn Leu Ser Val Gln Met Val Ala Ala Glu Lys Leu Ala Gln Cys Pro  
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Pro Asp Met Phe Asp Val Ile Leu Asp Glu Asn Gln Leu Glu Asp Ala  
Page 27

355

360

365

Cys Glu His Ile Ala Glu Tyr Leu Glu Ala Tyr Trp Arg Ala Thr His  
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Tyr Gly His Asp Tyr Thr Arg Asp Ala Tyr Ala Arg Glu Glu Tyr Gly  
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Leu His Ile Lys Glu Lys Tyr Asp Asn Asn Trp Trp Ile Gly Arg Leu  
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Val Lys Glu Gly Ser Asp Val Gly Phe Ile Pro Ser Pro Val Lys Leu  
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Ser Ala Ala Pro His Ala Pro His Ala Pro Pro Leu Ser Arg Gly Ser  
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210 215 220

Tyr Glu Val Thr Asp Met Met Gln Lys Ala Leu Phe Asp Phe Leu Lys  
225 230 235 240

Arg Arg Phe Glu Gly Arg Ile Ile Ile Thr Arg Val Gln Ser Asp Ile  
Page 30

245

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Ser Leu Ala Lys Arg Thr Gln Asn Ala Pro Lys Lys Pro Phe Val Glu  
260 265 270

Arg Ala Gly Asn Arg Thr Asn Cys Leu Ala Glu Ala Glu Ile Glu Arg  
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Page 46

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Thr Glu Phe Asp Cys Gln Gly Ser  
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gacagattct gccccgcacc cttt

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Lys Gly Ala Gly Gln Asn Leu Ser  
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Ser Gly Ile Pro Ser Leu Gln Val Val  
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Ser Ser Leu Arg Asn Leu Val Ile  
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Ile Phe Glu Val Val Trp Ser Glu  
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Cys Asn Ala Asp Asn Val Ser Leu  
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Ile Val Ile Phe Ala Ile Ile Gly  
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Ala Gln Asn Leu Glu Lys Thr Glu  
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His Leu Pro Asn Gly Asp Lys Thr  
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Gln Glu Ile Glu Arg Ile Phe Glu Leu  
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Arg Thr Leu Gln Leu Val  
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Ala Gln Cys Pro Pro Asp Met  
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tggaaagttc ttcggtaaaag ta

22

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ggcctggcac acatagatt

19

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cgggatttgct acataacttga c

21

<210> 76

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tttgtgacaa cccaacgaat ta

22

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23

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Val Gln Thr Trp Ala Glu Lys Leu  
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Cys Asn Gln Ala Ile Met Ile Val Ser  
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Pro Leu Thr Lys Val Ile Gly Leu Leu Pro Arg  
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